

WHAT IS CLAIMED IS

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1. A magnetic recording and/or
reproducing apparatus comprising:
10 equalization means for equalizing a signal
sequence which is reproduced from a magnetic
recording medium and outputting an equalized
waveform; and
conversion means for converting the equalized
waveform into a maximum likelihood sequence by
carrying out metric calculation based on average
15 values of the equalized waveform.

20 2. The magnetic recording and/or
reproducing apparatus as claimed in claim 1, further
comprising:

25 error detection and correction means for
carrying out an error detection and an error
correction with respect to the maximum likelihood
sequence using a parity bit,

30 said error detection and correction means
carrying out the error correction by comparing a
sequence which is obtained by convolution of the
maximum likelihood sequence and the average values
of the equalized waveform, with the equalized
waveform.

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3. The magnetic recording and/or

reproducing apparatus as claimed in claim 1, further comprising:

5 memory means for storing a conversion table which includes the average values of the equalized waveform.

10 4. The magnetic recording and/or reproducing apparatus as claimed in claim 3, further comprising:

control means for updating said conversion table at an arbitrary timing.

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20 5. A magnetic recording and/or reproducing apparatus comprising:

25 a look-up table which stores compensation amounts based on errors between ideal values and average values of a reproduced waveform of a signal sequence reproduced from a magnetic recording medium or average values of an equalized waveform which is obtained by equalization of the reproduced waveform; and

30 a compensation circuit which carries out a recording compensation with respect to a non-linear distortion based on said look-up table when recording the signal sequence on the magnetic recording medium.

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6. The magnetic recording and/or

reproducing apparatus as claimed in claim 5, wherein
said look-up table includes polarity information of
magnetic transition.

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7. The magnetic recording and/or
reproducing apparatus as claimed in claim 5, wherein
10 the compensation amounts reflect effects of the
magnetic transition of three or more preceding bits.

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8. The magnetic recording and/or
reproducing apparatus as claimed in claim 5, further
comprising:
control means for updating said look-up table
20 at an arbitrary timing.

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9. A magnetic recording and/or
reproducing apparatus comprising:
reproducing means for reproducing a signal
sequence from a magnetic recording medium and
outputting a reproduced waveform;
30 equalization means for equalizing the
reproduced waveform and outputting an equalized
waveform;
a look-up table which stores compensation
amounts based on errors between ideal values and
35 average values of the reproduced waveform or average
values of the equalized waveform; and
a compensation circuit which carries out a

recording compensation with respect to a non-linear distortion based on said look-up table when recording the signal sequence on the magnetic recording medium.

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10. The magnetic recording and/or
10 reproducing apparatus as claimed in claim 9, further comprising:

memory means for storing said look-up table, and a conversion table which includes the average values of the equalized waveform.

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11. The magnetic recording and/or
20 reproducing apparatus as claimed in claim 10, further comprising:

control means for updating said conversion table and/or said look-up table at an arbitrary timing.

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12. A magnetic recording and/or
30 reproducing apparatus comprising:

an equalization section which carries out an equalization with respect to a signal sequence reproduced from a magnetic recording medium, and outputs an equalized waveform; and

35 a conversion section which converts the equalized waveform into a maximum likelihood sequence by carrying out metric calculation based on

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average values of the equalized waveform.

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13. A magnetic recording and/or
reproducing apparatus comprising:

10 a reproducing section which reproduces a signal
sequence from a magnetic recording medium and
outputs a reproduced waveform;

15 an equalization section which carries out an
equalization on the reproduced waveform and outputs
an equalized waveform;

20 a look-up table which stores compensation
amounts based on errors between ideal values and
average values of the reproduced waveform or average
values of the equalized waveform; and

25 a compensation circuit which carries out a
recording compensation with respect to a non-linear
distortion based on said look-up table when
recording the signal sequence on the magnetic
recording medium.

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